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Ms Anna Collyer

Chair

Energy Security Board

Lodged by email to: info@esb.org.au

Windlab submission to the Capacity Mechanism – High-level Design Paper

Windlab welcomes the opportunity to provide feedback on the Energy Security Board (ESB)'s *Capacity Mechanism - High-level Design Paper* (the CM paper) published on 20 June 2022.

Windlab is a member of the Clean Energy Investor Group (CEIG) and fully supports the CEIG's submission.

In addition to what is contained in the CEIG submission, Windlab would like to make the following key points.

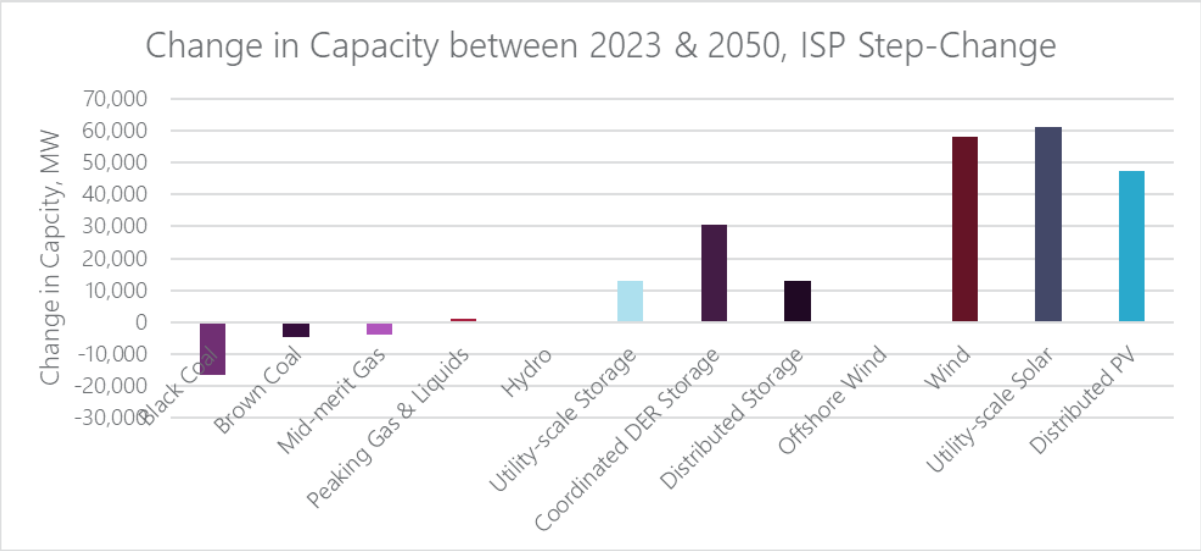
- Windlab does not support the current design for a capacity market as proposed by the ESB. The proposed design is likely to divert money from the energy market to the capacity market in a way that will disproportionately benefit coal and gas. In doing so it will likely move the NEM further from the least cost generation mix as determined by AEMO's ISP.
- Recommends that the ISP's Step Change Scenario be used to guide the design of the capacity mechanism. Poor alignment between capacity mechanism funds and the least-cost generation mix modelled in the ISP will increase the likelihood that the NEM moves in a sub-optimal direction resulting in increased costs to consumers.
- Does not support coal being eligible for capacity mechanism payments. Managing the orderly exit of coal generation should be done outside of the capacity market.
- Notes that the ISP Step Change Scenario has 8-10 GW of gas remaining in the NEM out to 2050. Support to gas generators via a capacity market should be limited to no more than the capacities specified in the ISP.
- Support for new investment in storage, and the generation that is likely to charge that storage prior to at-risk periods should be the highest priority of the capacity mechanism.
- Derating factors can be calculated by either a time-based method or an Equivalent Load Carrying Capability (ELCC) type approach. However, the methodology should consider the generation that is charging storage prior to at-risk events. It is of no use having storage during an at-risk period if it hasn't been pre-charged. Whichever method is used, the methodology should consider a wide range of at-risk periods, rather than just a few events concentrated in a particular season.

Better Alignment between Capacity Mechanism funds and the ISP's Step Change Scenario

AEMO's Integrated System Plan (ISP) has a range of scenarios incorporating least cost development paths and generation mixes. The Step Change Scenario has been identified by stakeholders as being the most likely scenario.

It is important that a major change to the current electricity market, such as this proposed Capacity Mechanism, will assist the electricity market to evolve in a way that is closely aligned with the least-cost generation mix as identified by the ISP. Poor alignment between the two increases the chance that the electricity generation mix will move away from the least-cost solution, resulting in increased costs for consumers.

The current design for the capacity market as proposed by the ESB is not well aligned with the ISP. There is a strong likelihood that the proposed capacity mechanism will likely divert money from the energy market in a way that disproportionately benefits coal and gas, and disadvantages wind & solar. This is in complete contrast to the changes in the generation mix as modelled in the ISP Step-Change Scenario, as indicated in the figure below.



The Orderly Exit of Coal

The ISP indicates that all coal is to be phased out the coming decades. The step-change scenario sees most coal gone by 2030. The inflexibility of coal is hindering the energy transition by increasing curtailment of renewables. Any money that is diverted from the energy market to coal via a capacity market is money that is not well aligned with the ISP and would be better spent on supporting the transition. Windlab recommends that the orderly exit of coal is better managed outside of the capacity market mechanism.

Eligibility of Gas

The ISP Step-Change Scenario indicates that 8-10 GW of gas is likely to be needed to out to 2050 to support the energy transition. That amount is similar to the current level of gas in the NEM. The ISP

indicates this level of gas is needed to maintain supply during extended periods of poor renewable generation. The MW capacity of gas eligible for funds from a capacity mechanism should be limited to the MW amount of gas specified in the ISP. Any funds going to gas in excess of this amount is money that would be better spent on storage, which the ISP indicates will need to grow from ~3 GW up to almost 60 GW by 2050.

A poorly designed capacity mechanism could lead the NEM to an over-reliance on gas and under-reliance on storage. This would hinder the energy transition, leave the NEM more exposed to volatile gas pricing and increase costs to consumers.

Derating Factors

The high-level design paper notes that at-risk periods are currently dominated by summer evenings, though at some point in the future this is likely to change to calm, cloudy winter days. Given the uncertainty as to when the at-risk periods are likely to occur, it is important that derating factors take into consideration a large variety of potential at-risk periods.

Windlab believes that either a time-based or Equivalent Firm Capacity (ELCC) approach could be used to determining the derating factors. Whichever method is used, it is important that the methodology also takes into consideration the generation which is charging the storage prior to at-risk periods. It is of no use having storage during an at-risk period if it hasn't been pre-charged.

However, if an ELCC type approach is used, then Windlab cautions against the proposed methodology that "requires first calibrating the reliability outlook in each region until it just meets the reliability standard". Given the extremely low levels of unserved energy specified by the reliability standard, Windlab is concerned that this methodology could reduce the at-risk periods to a very narrow selection of events that may not include a sufficiently large number of potentially at-risk periods.

An alternative solution could involve the model being calibrated to a level of unserved energy significantly higher than the reliability standard. This will capture a much larger variety of events, times of day and seasons that could become at-risk periods. In doing so, it reduces the risk of putting all eggs in a single basket, namely basing a derating factor on a very narrow range of at-risk periods which may not include a potential future high risk event.

Windlab thanks the ESB for the opportunity to provide feedback on the Capacity Mechanism design paper, and looks forward to continued engagement on these issues. For any further information about Windlab's submission, please contact David Osmond via the email david.osmond@windlab.com

Yours sincerely

John Martin

Chief Executive Officer

Windlab